

# How entrepreneurs engage with feedback during value creation – a taxonomy

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## Abstract

**Purpose** – Focused feedback, such as mentoring and coaching, is a crucial ingredient for generating the intellectual capital needed for successful venture creation and has become a structural resource offered to entrepreneurs in business incubator/accelerator programs. Yet so far, literature has remained silent on the way that entrepreneurs differ in their engagement with focused feedback in such programs. This study poses the question of how focused feedback engagement shapes cognitive development during value creation (i.e. business opportunity development), aimed at the construction of a taxonomy of such feedback engagement.

**Design/methodology/approach** – Focusing on cognitive learning outcomes, we carried out a qualitative analysis using NVivo to perform content analysis on the logbooks of 70 entrepreneurs engaged in business opportunity development in a highly regarded accelerator program.

**Findings** – Results show that engagement with focused feedback and its effects relate to the state of tangibility of the entrepreneur's value offer and to the amount of prior entrepreneurial experience. We also develop a promising taxonomy to classify entrepreneurs on their learning needs and outcomes (e.g. procedural versus declarative knowledge).

**Originality/value** – This study brings together types of human learning (types of knowledge acquired) with types of focused feedback. This connection has been speculated to exist in entrepreneurial settings; this study provides strong initial evidence that argues for more explicit consideration in practice. Adding the intellectual capital perspective further enabled this study to better address implications for practice as well as motivate powerful new directions for research.

**Keywords** Entrepreneurship, Cognition, Human capital, Coaching, Learning

**Paper type** Research paper

## Introduction

Human capital is one of the three central dimensions of intellectual capital and key for venture start-up, survival and growth (Calza *et al.*, 2014), in particular in the high-tech sector (Zane, 2023). Research also shows that cognition is an intrinsic and important component of human capital (Shela *et al.*, 2023).

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Focused feedback, such as mentoring and coaching, is a critical ingredient in evolving the entrepreneur's cognition towards a more expert entrepreneurial mind, while correspondingly evolving the entrepreneur's venture (Krueger, 2007; Grégoire *et al.*, 2011).

Scholars recognize that there is a significant relationship between focused feedback and entrepreneurial cognitive development. For example, studies have looked at the role of feedback in such development, for example the process (Van Werven *et al.*, 2023) as well as satisfaction with focused feedback by entrepreneurs (Van Werven *et al.*, 2023). St-Jean and Audet (2012) showed that focused feedback contributes to the development of entrepreneurial cognition, by facilitating the process of "re-organization" of knowledge. Meanwhile, we know little about how differing roles of entrepreneurs affect their feedback engagement as well as associated knowledge development. Grimes (2018) mentions various passion- or identity-related typologies of entrepreneurs which prior studies have shown are enacted by entrepreneurs during business opportunity development, however urged scholars to "move beyond creating typologies that define the range and parameters of possible roles and social categories" but instead to examine "how these roles and categories are in flux".

Moreover, one critical component of new strategic tools for entrepreneurs such as lean startup and design thinking is focused learning from focused feedback (Camuffo *et al.*, 2020; Ghezzi, 2020). It is thus important to understand at a deeper level what entrepreneurs need to learn and how they learn it. In fact, how we make sense of the world – and how this changes – is central.

Intellectual capital is a growing topic in entrepreneurship research, for example, seminal work by Pena (2002) and the recent work by Crupi *et al.* (2021) that supports and details the importance of intellectual capital for startups. In this study, we center our attention on the role(s) of focused feedback. In this study, we aim to identify factors that enable a taxonomy that accounts for the dynamic nature of entrepreneurs' feedback engagement and associated cognitive development.

We pose the following research question: *How does focused feedback engagement impact the entrepreneur's cognitive development?* Our study makes the following contributions to the literature. One, scholars have called for a better integration of insights and suggestions from entrepreneurship theory with studying IC as such studies help understand the IC entrepreneurship relationship and in particular, how IC can be practically managed "in order to let its potential to be fully exploited" (Crupi *et al.*, 2021, p. 552). We answer this call by synthesizing insights from entrepreneurship, social cognitive and human capital theory to contribute to a better scholarly understanding of factors that help explain knowledge transfer processes during novel value creation. For example, one reason for the power of newer tools like customer discovery is that when executed skillfully, they engage in what has been described as sense breaking (Giuliani, 2016), crucial in IC (development).

Second, knowledge acquired by founders is a crucial component of a venture's ability to gain a competitive advantage (Crupi *et al.*, 2021) however we lack nuanced understanding of how entrepreneurs access and obtain advice, according to Gately and Cunningham (2014). Similarly, Maaravi *et al.* (2020) urged scholars to study different entrepreneurship pedagogies and associated impact on knowledge development. Our study contributes to this literature by comparing the role of different feedback sources on entrepreneur's cognitive development.

## Theoretical development

### *Focused feedback*

Prior research has found that different feedback sources influence how individuals are affected by feedback. This has critical implications for skillful mentoring which is even more important for entrepreneurs from underrepresented populations (Assenova, 2020). For example, individuals are affected differently by feedback depending on the credibility of the feedback source (Kim *et al.*, 2014). And Bisk (2002) found that entrepreneurs' age and education impact on whether entrepreneurs benefited from the mentoring engagement.

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These results indicate that the source of feedback matters, and that personal attributes that vary can affect entrepreneurs' engagement with focused feedback. Although scholars have established the variability of feedback effect coming from different sources (Kim *et al.*, 2014), this variability has not yet been examined among entrepreneurs. Notably, Maaravi *et al.* (2020) made a case for more comparative analysis of different types of training on professionals' cognitive development.

#### *Focused feedback during business incubation/acceleration programs*

Throughout the last two decades, there was an upsurge of business incubation and acceleration programs with an emphasis on focused feedback, in the form of mentoring, counseling, or related services (Gulbranson and Audretch, 2008). This is not surprising, given that expertise development characteristically relies on thousands of hours of deliberate practice – in addition to timely and focused feedback aimed at improvement (Ericsson, 2008).

*Coaching.* An increasingly popular intervention during venture start-ups is that of focused feedback via coaching or mentoring. While there are differences between coaching and mentoring, they resemble each other in the sense that they both are geared towards the mentees/coached individual's career/professional and personal development – albeit in (slightly) different ways relating to process and content (Crompton *et al.*, 2011).

We know that focused feedback from mentors or coaches increases the self-efficacy of mentees (Saadaoui and Affess, 2015), his or her self-confidence as well as self-esteem (Waters *et al.*, 2002). Research also showed that it augments the ability to achieve goals, identify problems, learn, manage the firm and deal with change (Deakins and Freel, 1998) and increase knowledge and the contact network (Wikholm *et al.*, 2005). Radu Lefebvre and Redien-Collot (2013) found that mentors influence entrepreneurs' attitudes and behavior by means of several communication strategies: persuasion, engagement, criticism and provocation, while the impact of these strategies is categorized in terms of commitment, compliance, or resistance.

*Panel presentations.* In addition to focused feedback in the form of coaching and mentoring, focused feedback is increasingly studied in "pitch" or panel presentation situations. This form of focused feedback consists of a rather short verbal presentation of the business idea to a panel of (relevant) experts or other (potential) stakeholders, such as five-minute verbal pitches that are used by venture capital firms and entrepreneurship competitions.

According to Miron-Shatz *et al.* (2014), panel presentations have gained increasing importance in and perpetrated the context of institutionalized, regulated settings, as entrepreneurial education programs increasingly incorporate panel presentations in their BI curriculum (Tsay, 2021). Studies have examined the preparedness of entrepreneurs when giving presentations to venture capitalists (Chen *et al.*, 2009), impact of the entrepreneurs' presentation skills and preparedness on business angels' initial investment decisions (Galbraith *et al.*, 2013) and how entrepreneurs use the pitch presentation to enact their business opportunity and enlist the help of stakeholders (Pollack *et al.*, 2012) describe.

#### *Focused feedback and cognitive development*

Entrepreneurial cognition relates to interpretative and decision-making processes about the development and exploitation of business opportunities (Foss *et al.*, 2008; Grégoire *et al.*, 2011). It plays an important role during opportunity identification and preparation (Baron and Ensley, 2006; Mitchell *et al.*, 2009) including intentions. Cognition relates to knowledge structures which help us organize the way we interpret, analyze, remember and use information about the social world (Mitchell *et al.*, 2002a, b, 2007). Scholars have argued that cognitive development is crucial for moving from a more novice entrepreneurial mindset to a more "expert" or "entrepreneurial" mindset (Krueger, 2009; Krueger and Day, 2010; Kaffka and Krueger, 2018; Hattenberg *et al.*, 2021). St-Jean and Audet (2012) studied the role of

focused feedback on the cognitive development of individuals engaged in value creation. They found that cognitive (strategies) development was by far the most relevant for—and sought after by—novice entrepreneurs. Similarly, other research has identified specific “mental maps” and cognitive scripts used by entrepreneurs when they gain experience in setting up an entrepreneurial venture (Mitchell *et al.*, 2002a, b; Baron, 2004; Brännback and Carsrud, 2009; Santos *et al.*, 2010).

In this study, we define cognitive development in terms of three different cognitive learning outcomes distinguished in the literature (Kraiger *et al.*, 1993). They include (1) declarative knowledge which is associated with verbal knowledge of concrete pieces of information, for example, a name, a concept or a theory – usually related to a specific area of expertise (“what”); (2) knowledge organization, or procedural knowledge, for example about different stakeholders’ perspectives and “linking knowledge together” (“how”) and (3) cognitive strategies associated with the ability to find the best problem-solving strategy for a particular problem, or “learning to learn” (Kraiger *et al.*, 1993). Murray and Palladino (2021) showed how mentoring and feedback can influence procedural and declarative knowledge in entrepreneurs’ development of intellectual capital.

Cognitive strategies are particularly relevant. They encompass a broad range of metacognitive activities enabling knowledge acquisition and application (Kraiger *et al.*, 1993), such as individual planning, monitoring and revising goal-appropriate behavior.

#### *Taxonomy of focused feedback engagement*

In the early days of entrepreneurship research, scholars proposed typologies which reflected intentional strategies. Notably they concerned typologies based on a dichotomy. Famously, Woo *et al.* (1991) argued for a distinction between craftpersons and opportunists. And Stevenson and Gumpert (1987) made a distinction between promoter and trustee.

On the other hand, are two categories enough? Abraham (2011) developed a four-fold (“BOSI”) taxonomy based on the support that they needed/wanted. Similarly, Müller and Korsgaard (2018) created a four-fold typology of rural entrepreneurs that emerged from the spatial constraints of their ventures. These studies suggest that developing a taxonomy from entrepreneurial needs, rather than strategic intent.

Since there is no systematic conceptualization of how different focused feedback mechanisms affect entrepreneurial cognitive development differently, we aim to establish such a taxonomy based on empirical, qualitative data.

#### **Method**

We carried out a qualitative study. This research design facilitates the analysis of evaluative, cognitive processes (Denzin and Lincoln, 2000; Rynes and Gephart, 2004). Because the focus of this study is on cognitive knowledge development, such an approach fits our purposes well.

#### *Research setting*

Carayannis *et al.* (2014) pointed to the key role of intellectual capital development in technology commercialization settings. Characteristically, entrepreneurs participating in BI programs are not yet in the exploitation phase of their entrepreneurial opportunity, but instead in the earlier phases of opportunity identification and preparation. Such a setting typically involves focused feedback. Therefore, we decided to collect data at a business incubator/accelerator (BI), located in the Netherlands. Entrepreneurs who took part in the one-year program of the BI had access to various resources. This program offered coaching (weekly) as well as feedback from an expert panel feedback at least twice during the program (after four months and after eight months) to all entrepreneurs participating

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in the program. This condition of relatively frequent, regular and reliable targeted feedback engagement events made the incubation/acceleration program a suitable setting for our study.

### *Sampling process*

To ensure we could distinguish and compare differences in the way entrepreneurs leverage targeted feedback; we selected entrepreneurs from a population that was characterized by a wide variety of experience and background.

Respondents were selected from the population of more than 150 entrepreneurs who had finished the one-year business acceleration in the recent past (within the last half year). We applied purposeful sampling to our initial sample of 70 respondents. We discarded those respondents who were either not self-employed (for example they had a franchise or were family entrepreneurs and not starting a novel business opportunity) or they had stopped developing their business opportunity.

Another sampling condition related to the amount of diary writing by an entrepreneur. The diaries' written entries varied considerably in terms of frequency and scope. To ensure that we collected sufficient data for analysis, we only sampled entrepreneurs who had written in their diary at least for 20 weeks during the one-year BI program.

### *Sample description*

The final sample contained 57 entrepreneurs. On average, entrepreneurs in our sample were 45 years of age, had 15 years of work experience and 7 years of prior entrepreneurial experience. However, respondents varied greatly in amount of prior entrepreneurial experience, age group, educational and employment histories as well as business opportunity.

Regarding the educational background, 31 entrepreneurs had an education in the fields of natural sciences and engineering (which we label "technical" education) as opposed to 28 entrepreneurs with an education in the social sciences and humanities (which we label "non-technical" studies). Three respondents had not provided this information. With only five female entrepreneurs in our final sample, the distribution of gender was extremely skewed. The average age of entrepreneurs in our sample is 45 years, with an average of 15 years of work experience and 7 years of entrepreneurial experience.

### *Data collection*

For this study, we used "prospective" data collected in real-time during a specific process or phenomena. It stems from logbooks kept by the entrepreneurs who took part in the one-year BI program. Keeping a detailed logbook was a requirement for the entrepreneurs to take part in the program. Each logbook entry addresses four topics explicitly; these are "learnings", "results", "issues" and "next steps".

The weekly logbook entries were filled in and kept digitally. Anonymity for the program participants and discretion in handling the data were guaranteed to all participants and strictly respected by the researchers throughout the process of data collection and analysis. The weekly frequency sought to minimize skewed reports due to "retrofitting" which describes people's tendency to forget (relevant) details or succumb to nostalgia by sketching a situation or event as more advantageous, beneficial, or positive than it might have actually been, the longer an event is in the past (Kaffka and Krueger, 2023). On average, the respondents wrote diaries during 37 weeks of the 52 weeks of duration of the incubation/acceleration program. This translates to about more than two-thirds of their time in the program. Therefore, the amount of logbook entries provides a reliable source of information

about the entrepreneurs' perception and interpretation of their time in the program. *Measures.*

We operationalized focused feedback in terms of: expert panel feedback and mentoring feedback (mentoring being interchangeably used with coaching here). Our primary data source consisted of logbook entries' reports on such engagement, intended *and* carried out. Additional information, where available, was drawn from the incubator records of the expert panel pitch feedback.

*Mentoring feedback.* All respondents had access to mentoring feedback of one hour a week, with the same mentor throughout the length of the incubation program (one year).

*Panel feedback.* In addition to the logbooks, we had access to qualitative expert panel feedback obtained from panel feedback forms on which the panel members of the pitch panel members had written their remarks (twice during the one-year incubation program). These feedback remarks were transcribed verbatim, and the nouns and verbs were coded as panel feedback items. The same or very similar feedback mentioned by two different expert panel members during the same session was coded as one item.

*Cognitive development.* We operationalized the measure of engagement with such focused feedback operationalized in three ways: We operationalized cognitive development following [Kraiger et al. \(1993\)](#) who distinguished between declarative knowledge (associated with statements and facts, the "what"), procedural knowledge (associated with knowledge organization and problem-solving strategies, the "how") and cognitive strategies (associated with epistemological stance, monitoring and evaluative strategies, the "why").

### *Coding*

The data collected from the digital logbooks was first entered into a dataset in the software program QSR NVivo. NVivo is an inductive, systematic and flexible coding tool in which conceptual categories can easily be coded digitally. We proceeded by identifying and comparing the reported engagement with the two focused feedback mechanisms of coaching and expert panel presentations. In total, we coded about 10,500 logbook entries. From NVivo reports of search engine outcomes, we identified a total of 402 instances in the logbooks that related to the two mechanisms of focused feedback.

*First-order coding: Thematic coding.* Two coders separately coded the instances in the logbooks in which feedback interactions and results were mentioned (as reported by entrepreneurs in the logbooks). The two coders then compared the identified sensemaking reports of respondents about (intended) coaching or panel (inter)actions and their results against other reports and discussed similarities and differences. Based on these comparisons and discussions, we construed so-called content-oriented thematic data points ([Seale, 1998](#)).

By means of cross-comparison of data and inter-rater comparison of coding results, we identified several recurrent themes of feedback engagement (reported, either intended or acted upon). These themes were coded in terms of thematic learning (with distinction made between intentions and outcomes). They pertain for example to knowledge about business planning and modelling, or to a more positive attitude toward potential customers and an increased awareness of the importance of stakeholders. The former was assigned the thematic label "business plan/model", whereas the latter are coded thematically as "market orientation".

*Second-order coding: cognitive development.* The second-order coding of the data contains the coding of cognitive development described by [Kraiger et al. \(1993\)](#). These are declarative knowledge (verbal learning), procedural knowledge (knowledge organization) and (meta) cognitive strategies (including identity work) or a combination of those three categories where applicable and agreed upon by both coders.

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## Results

Findings of the analysis showed that focused feedback stimulates the development of the entrepreneurial mindset by “forcing” nascent entrepreneurs repetitively to focus on their business development, make choices and think strategically. Focused feedback appeared to act as a “catalyst” for intention formulation and activities carried out by the entrepreneur, resulting in the entrepreneurs’ development of declarative and procedural knowledge.

An important mechanism in focused feedback engagement is its enabling identification of relevant stakeholders – employees, collaborative partners as well as investors and reflecting on the entrepreneur’s personal role in the venture. Human resource management is an important issue for those that already set up a company; quick growth can lead to trouble with finding people and delegating tasks. Notably, entrepreneurs in the phase of acceleration (as opposed to incubation) and those with more prior entrepreneurial experience reported coaching feedback more often than they reported feedback from the expert panel.

The results show that development of cognitive strategies resulted mainly from coaching feedback. Entrepreneurs reported that coaching sessions triggered perspective-taking, critical thinking as well as reflection (notably on the entrepreneurs’ own identity). A simple explanation for this is that engagement with coaching feedback was more accessible for entrepreneurs in the BI program (weekly frequency) than expert panel feedback (only twice or three times during the one-year program. [Figure 1](#) contains an overview of thematic categories reported by entrepreneurs in their logbooks.

Furthermore, the analyses revealed that two factors in particular affect variance in how feedback engagement differs. We observed that differences in cognitive learning outcomes differ among entrepreneurs in our sample, and that these differences depend on (1) prior entrepreneurial experience and (2) value offer tangibility (product vs service). This yields a matrix with four distinctive categories of entrepreneurs. Below we describe each category in more detail.

### *Prior entrepreneurial experience*

The data showed that novice entrepreneurs indicate more declarative knowledge development associated with mentoring than experienced entrepreneurs, while the latter more often reported development of procedural knowledge and cognitive strategies. In general, we saw the following trends: (1) The less experience the more “identity work” (2) The less experienced the more general learnings; (3); The more experienced, the more concrete issues.

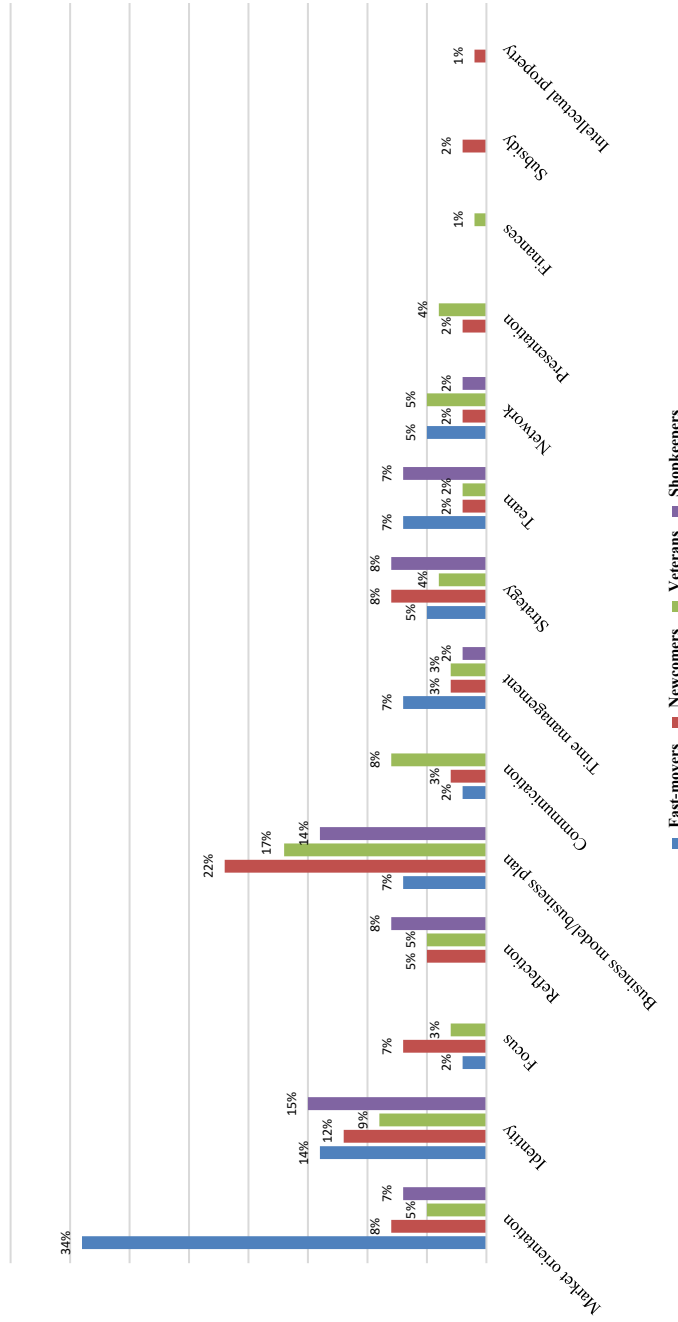
### *Tangibility of value offer*

Both novice and more expert entrepreneurs who sought to create value by means of developing a service-based business opportunity report panel feedback engagement extensively, mainly yielding declarative knowledge development. A product-based value offer provides business opportunities of scalability based on their materiality which appears to yield different feedback engagement needs.

While prior entrepreneurial experience does allow entrepreneurs to “tap into” existing knowledge and skills regarding successful value creation, our findings indicate that this does not automatically facilitate the shift from service-based to successful product-based value creation (arguably higher up the “tangibility” scale).

### *Taxonomy building*

Both amount of prior entrepreneurial experience as well as tangibility of the value offer are variables that help explain how and why entrepreneurs (intend to) engage in feedback



Source(s): Kaffka, G. A. (2017). The co-construction of entrepreneurial sensemaking: An empirical examination of socially situated cognitive mechanisms in entrepreneurial cognitive development. University of Twente: Enschede, Netherlands

Figure 1.  
Thematic learning  
outcomes

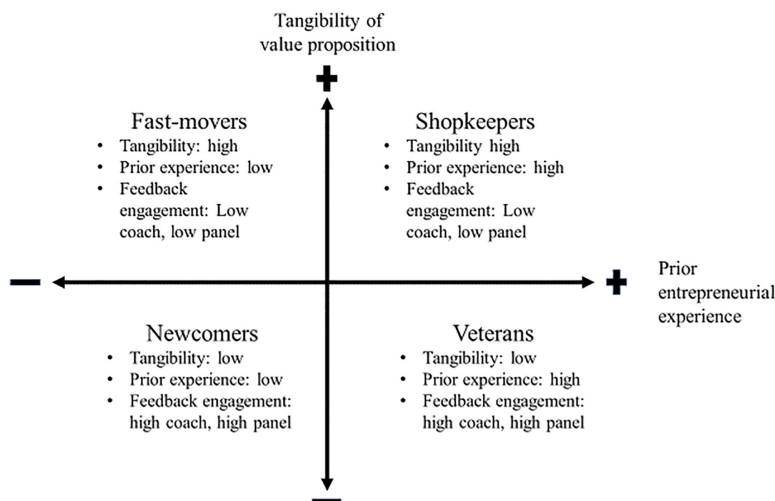


engagement by respondents in our sample. The two variables inform the taxonomy illustrated in the matrix found in Figure 2 and presented below in more detail.

*Group 1: fast-growers.* 12 entrepreneurs in our sample are novice entrepreneurs and rather young of age; the average age of entrepreneurs is 36 years. Entrepreneurs in this category typically hold a degree in higher (vocational) education in the natural or engineering sciences. On average, they have two years of entrepreneurial experience and 8 years of working experience.

These entrepreneurs develop their business opportunities mainly in the sector of machinery, (technological) equipment and components. Their venture is set up around a patent or prototype that is (loosely) linked to university or industry research; if not via their own educational track, they are affiliated with experts, professors, or another high-ranked actor in the field of engineering or natural science. Characteristically, entrepreneurs in this category hold an existing – or pending – patent and have set up their business organization at great speed and ready to produce value after a maximum of three years, either on their own or in collaboration with a launching customer. This category also shows the most goal-oriented and intentional engagement with focused feedback, describing the outcomes of it very specifically. Though they are not as passionate about the feedback they receive as other categories, they report to take feedback interactions seriously, as we identified significantly more intentions for actions related to value creation because of focused feedback engagement, making this category of entrepreneurs the most “disciplined” learners of all regarding their coach and panel meetings.

*Coaching feedback.* Fast-growers report significantly more engagement with coaching than with expert panel feedback. Also, entrepreneurs in this category are most concise of all in the formulation of their next steps based on that feedback. Cognitive outcomes reported because of coaching feedback related mainly to procedural and declarative knowledge development, with market-oriented themes of customer relations/acquisition, and the business model or business plan. To a lesser extent, we identified learning of novel cognitive strategies, often related to [entrepreneurial] identity work.



**Figure 2.**  
Taxonomy of  
entrepreneurs

*Panel feedback.* Entrepreneurs in this category rarely reported expert panel feedback. They also reported significantly less thematic learning outcomes as related to engagement with expert panel feedback. Fast-growers almost exclusively report the development of procedural knowledge, translating the feedback to concisely reformulated goals or points of attention. The group of fast-growers reports the use of panel feedback to “test” their business plan, value creation logic or market orientation.

*Group 2: newcomers.* 18 entrepreneurs in our sample are novice entrepreneurs like fast-growers, however this category started the entrepreneurial journey somewhat later (at 46 years old). On average, they have four years of prior entrepreneurial experience and 22 years of prior (employed) work experience, much more than entrepreneurs in other categories. With one exception, all entrepreneurs in this category have an educational background in arts and social sciences and some have significant prior experience with freelance work, but they always kept employment (part-time). In this group, entrepreneurs develop a service-based business opportunity, most often IT services and consultancy or the media and print sectors.

*Coaching feedback.* This group reports (seeking) engagement with coaching feedback more often than other groups however with less specific questions. Newcomers mention outcomes of coaching in terms of procedural knowledge development, regarding how to design a business plan, as well as declarative knowledge, such as new concepts in marketing. To a lesser extent, coaching affects cognitive strategies in terms of identity development and risk assessment regarding a self-employed lifestyle, or personal reflection on identity development.

*Panel feedback.* We noted this category reports the least intentionality and goal-setting with regards to panel feedback engagement. In terms of outcomes, panel feedback yields development of declarative knowledge—mainly related to the entrepreneur’s business model or business plan – and procedural knowledge, mostly regarding presentational skills. Furthermore, we identified the development of cognitive strategies regarding the business plan as well as identity work.

*Group 3: veterans.* 18 entrepreneurs in our sample are categorized as veterans. This group categorizes entrepreneurs with diverse disciplinary backgrounds (ranging from humanities to natural science) and high educational degrees. On average, they are 50 years old, with significant prior entrepreneurial experience—ten years—in consultancy in sectors of commercial services and supplies or IT services. Now, these entrepreneurs characteristically aim to develop another, product-based opportunity. While entrepreneurs in this category are familiar with self-employment, so far they have relied on a service offer, and report unfamiliarity with production chains, product marketing and up-front investments.

*Coaching feedback.* Veterans are experienced entrepreneurs which might explain why they are more critical of coaching quality than other groups are (in this group, entrepreneurs change coaches more often than in the other groups). This group reported more declarative than procedural knowledge development from coaching. They report a wide range of thematic learning outcomes, related to business model elements (or those of a business plan), communication, presentation to potential collaborative partners, potential subsidy distributors and how to set up a team. They also report development of cognitive strategies related to identity work, usually regarding work/life balance.

*Panel feedback.* Entrepreneurs in this category appreciate the panel’s critical feedback, more than the other groups, indicating willingness to reflect upon it as well as to put it to practical use. Cognitive development occurred mainly in terms of procedural knowledge, for example how to improve one’s communication skills. To a lesser extent, this group reported declarative knowledge development and – more than in other categories – we

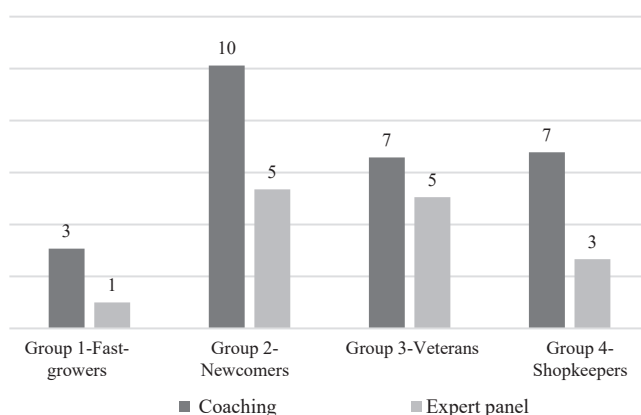
identified novel cognitive strategies related to their business idea and their entrepreneurial identity.

*Group 4: shopkeepers.* The fourth group of entrepreneurs are also experienced entrepreneurs who characteristically seek to enter a new market with an existing product or want to develop a new product in addition to the already existing product. There are 9 entrepreneurs in this category, characterized by a slightly older average age than entrepreneurs in the other categories, namely 49 years. Shopkeepers characteristically have more prior entrepreneurial experience than other categories – on average 12 years – however they have less work experience in employment than the others. Most of them have work experience in commercial services and supplies, software and IT services, and to a lesser extent in machinery, equipment and components. Shopkeepers report being “wrapped up” in day-to-day business activities of their venture which is more mature in comparison to that of the other three categories. The data shows that shopkeepers (like fast-growers) tend to formulate goals and intentions precisely, seeking focused feedback to reassess their venture’s long-term, strategic vision.

*Coaching feedback.* Shopkeepers consider coaching feedback for growth- and organizational questions, often yielding acquisition of procedural knowledge relevant for business model/plan development or marketing (how to do sales). They seek feedback on strong and structured interaction with their environment, in terms of the identification and acquisition of more or different customer segments and the best way to deliver value to these segments. They are concerned with the planning of the company’s future, but also what this means for themselves. Thematic learning outcomes relate to identity work, or the entrepreneur’s market orientation and his (changing) role in his company.

*Panel feedback.* In this group, reports of cognitive development related mainly to declarative and procedural knowledge acquisition. Thematically, most of it reported pertained to the venture’s business plan or business model, as well as its market orientation, such as pricing aspects. To a much lesser extent shopkeepers also reported development of cognitive strategies because of expert panel feedback. Thematically, this is related to identity work.

Figure 3 shows the different categories we identified in the analysis, as well as their respective (intended) engagement with coaching and expert panel feedback.



**Source(s):** Kaffka, G. A. (2017). The co-construction of entrepreneurial sensemaking: An empirical examination of socially situated cognitive mechanisms in entrepreneurial cognitive development. University of Twente: Enschede, Netherlands

**Figure 3.**  
Engagement with  
focused feedback per  
classified group  
(averaged per group)

## Discussion

In this study, we examined the role of engagement in focused feedback on the cognitive development of entrepreneurs involved in value creation. Based on our findings, we draw the following main conclusions which are discussed in the light of existing theory.

### *Coaching versus panel feedback effects on cognitive development*

The data shows that focused feedback mechanisms (in the form of coaching and expert panel feedback) yield cognitive development, with coaching feedback generally yielding more reports of metacognitive development (cognitive strategies) than feedback from the expert panel.

The data also revealed a complementary effect of two feedback mechanisms in terms of the “pulling” or “pushing” method of feedback (Cull, 2006). Cull (2006) described the “push” method of feedback as drawing someone in the direction of the “right” conclusion by being explicit about it, while the “pulling” method helps entrepreneurs to develop their meta-cognition.

The differences between coaching and panel feedback outcomes parallel the differences between the pull and push effects of feedback described by Cull (2006). We observed that panel feedback notably leads to the acquisition of new information, concepts or theories which has the effect of “pushing”. The “push” effect happens more often because of expert panel feedback instances than of coaching feedback. Specifically, the categories of “Newcomers”, “Fast-growers” and “Veterans” report the learning of presentational skills from the expert panel feedback, which is a valuable “pushing” effect of panel feedback because it is an important skill in business development and for investor attractiveness (Chen *et al.*, 2009).

Coaching, on the contrary, leads to what is called the “pull” effect: The “pull” effect of coaching feedback occurs through listening, asking the right questions and drawing out personal answers to problems. Our results show that the coaching feedback functions mainly in terms of the “pull” effect and helps entrepreneurs to develop their *metacognition*, namely entrepreneurial, general (market-oriented) heuristics. Metacognition enables individuals to know when and why to use strategies (Schraw and Dennison, 1994). Such knowledge has been described as conceptual knowledge critical to professional performance (Hatano and Inagaki, 2016), is associated with the ability to reflect upon, understand and control one’s learning (Haynie *et al.*, 2016) and is particularly relevant in decision-making under conditions of uncertainty, characteristic for entrepreneurial opportunity development. In this study, we find that while the “pushing” is more frequently achieved by expert panel feedback, the “pulling” is mainly affected by coaching feedback. This supports St-Jean and Tremblay’s (2020) finding that mentoring/coaching raises entrepreneurs’ self-efficacy at opportunity identification. In doing so, our findings contribute to a more nuanced understanding of (developing) entrepreneurial metacognition.

Mitchell *et al.* (2002a, b) found that entrepreneurs draw on cognitive scripts related to (1) arrangement (2) willingness and (3) ability. Our findings show that entrepreneurs in our sample mainly mention the learning of arrangements scripts (12 of the 14 thematic learning outcomes). Two learning outcomes associate with willingness scripts, and the other two are related to ability scripts. Notably, entrepreneurs in three of the four categories refer to development of arrangement scripts the most often. Except the category of fast-movers; here, most learning outcomes identified relate to (development of) willingness scripts. Our findings extend Mitchell’s *et al.* (2002a, b) findings, by proposing nuances that underscore varied script development among different entrepreneurs engaged in novel value creation.

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### *Intentional feedback engagement*

Studies on expertise development have examined cognition used by professionals under conditions of novelty or uncertainty in task achievement in organizational settings (Ward *et al.*, 2018) - much like in the case of novel value creation. Research suggests that cognitive change might be most successfully realized by changing “deeply seated beliefs and belief structures” (Krueger, 2007).

Haynie *et al.* (2016) who examined the nature of a situated metacognitive mindset of entrepreneurs argued that metacognition can be enhanced through training and that it is important in achieving desirable outcomes from entrepreneurial actions. Deakins and Freel (1998) suggested that entrepreneurial learning is seldom planned, but the result of a set of reactions to critical events, where one learns to process information, adjust strategies and make decisions.

Kaffka *et al.* (2021a) observed that intersubjective reframing in particular yields reflection and changes in someone’s understanding and beliefs (including identity work). Our results show a similar development. Namely that perspective-taking and engaging in focused feedback yield critical self-reflection and new understandings. Focused feedback, we observed, goes beyond the transfer of declarative and procedural knowledge to encompass conceptual knowledge building – though not for all entrepreneurs in equal ways, as our data showed.).

### *From development of cognition toward mindset*

Our results contribute to the literature by showing that entrepreneurs differ in focused feedback engagement and outcomes, and that this does also depend on the nature of the value which is created (i.e. its tangibility). Research shows that reframing contributes to developing metacognitive skills (Giuliani, 2016; Kaffka *et al.*, 2021a). Reframing relates to a change in someone’s current understandings, values, or beliefs (Pratt, 2000), and entails the critical analysis and interruption of existing understandings and assumptions (Ward *et al.*, 2018), triggering meta-cognitive change described as changes in “underlying cultural assumptions” (Schein, 1990).

We observed that reframing plays an important role in triggering deliberate and critical reflection among entrepreneurs, namely on their business model, and enabled development of conceptual knowledge, in the form of novel market-oriented strategies. These results confirm prior research by St-Jean and Audet (2012) on the role of focused feedback on development of metacognition among entrepreneurs and contribute to a more nuanced understanding of how critical events are vital in developing higher-level learning.

### *Practical implications*

Based on the results of our study, we identify three implications.

One, we propose that incubation support staff can leverage the differential effects of coaching and expert panel feedback on cognitive learning outcomes. Mentoring is a costly way of supporting entrepreneurs in novel value creation. Our findings indicate that panel feedback – even if less frequent – can provide valuable focused feedback and represents an alternative to one-on-one mentoring to offer feedback during strategic decision processes which are riddled with cognitive biases (Das and Teng, 1999). Our segmentation of entrepreneurs provides valuable tools for planning and implementing feedback instances in incubation/acceleration programs.

Second, our model has implications for policy-makers and educational designers regarding the time frame which cognitive learning takes. Training interventions using diaries are found to contribute to building entrepreneurial cognition among students (Hägg, 2021). The analysis revealed that proactiveness as part of entrepreneurial cognition

can be stimulated, but it does take time. Often, logbook entries reflected a more action-oriented behavior on a particular aspect months after feedback on that aspect was given by the coach or panel members. Practically, we recommend that feedback should be more repetitive and subject to experience to be most beneficial. On a related note, more personal-focused feedback provides a setting inductive to intimate and trust-based relationships, thus possibly enhancing (openness to) cognitive learning by the entrepreneur.

Third, we recommend that incubation/accelerator programs, indeed most training programs, take a more design-based perspective and integrate the use of artifacts in their pedagogical strategy. We observed that most of the newer strategic tools designed for entrepreneurs, whether lean startup (Camuffo *et al.*, 2020; Ghezzi, 2020), business model canvas (Kaffka *et al.*, 2021b), prototyping (Savoia, 2011), or design thinking (Penaluna and Penaluna, 2009, 2019; Penaluna, 2021) have focused feedback at their heart of their effective use. Even mundane business planning is enhanced by more skillful use of focused feedback (Osiyevskyy *et al.*, 2013). Most of the newer strategic tools designed for entrepreneurs, whether lean startup (Camuffo *et al.*, 2020; Ghezzi, 2020), business model canvas, prototyping (Savoia, 2011), or design thinking (Penaluna and Penaluna, 2009; Penaluna, 2021) have focused feedback at their heart of their effective use.

#### *Limitations*

This study has several limitations. One, we studied a biased sample of entrepreneurs. Our data was drawn exclusively from logbooks of entrepreneurs in a business support environment, hence (though intentionally) limiting our sample to help-seeking entrepreneurs. Second, we did not consider the impact of person-coach fit, while matching intervention style is shown to matter (St-Jean and Audet, 2012). A third limitation concerns the form of the data. Logbook data is a very “raw” form of data; the entrepreneurs were free to write down thoughts about their development, only guided by the four “topics” within each weekly logbook. The result is rather chaotic data; sometimes, sentences are not finished, and various issues are mentioned in general without going into relevant details or names of the parties involved. However, the resulting real-time data also makes it a very pure and authentic form of research data.

#### *Future research*

Based on the results of this study, we identify four distinctive research avenues that promise the generation of valuable insights into the process of business opportunity development.

First, the taxonomy of feedback effects developed in this study facilitates assessment of relative value of different types of focused feedback. While studies have shown that feedback has a positive effect on opportunity recognition and cognitive learning (St-Jean and Audet, 2012), future studies could yield more understanding of the effect of long-term interventions during business opportunity development. Research into this area can contribute to optimization of support systems of business incubation/acceleration, for example, monitoring and providing feedback engagement based on differing amounts of prior experience or different types of business opportunities.

Second, qualitative data is increasingly seen as important in business research (Watson, 2011), as more fine-grained data collection methods and automated analyses can provide a richer understanding of unique entrepreneurial processes. Modern technology and multimedia offer proficient means for academics to design novel research instruments, for example in the form of digital logbooks, short electronic surveys, or use of web- or phone-based (social media) applications.

Third, our taxonomy might find useful application in explaining differences among entrepreneurs in other contexts. The proposed segmentation could help explain ex ante differences in entrepreneurial intentions, but also in goal-setting behavior, regarding team development, networking, or investment decisions. Therefore, we advocate more research in this direction.

We believe that this study will open the door to further and even deeper study of important mechanisms of feedback in the entrepreneurial ecosystem. Support from the ecosystem (not just focused feedback) could be tailored according to differing cognitive development needs. Csonka-Peeren and Cozzarin (2021) showed that entrepreneurs differ in terms of their attitudes to ambiguity which in turn require different approaches to cognitive development. And Björklund and Krueger (2016) and Cukier *et al.* (2015) observed that the successful co-evolution of entrepreneurs and the ecosystem hinges in large part on healthy feedback processes that facilitate cognitive development across the ecosystem. Grande *et al.* (2023) demonstrate the explore-exploit decision depends on explorative and exploitative intellectual capital which is at least partly driven by these same processes. These suggest a fruitful domain for entrepreneurial ecosystems research.

## Conclusion

This study identifies “how things work” in terms of subjective experience for individuals (Watson, 2011) by providing systematic insights not only into the content of focused feedback but also into the variance in associated cognitive development as reported by entrepreneurs. Our results show that focused feedback matters, and that feedback engagement as well as its (cognitive) effects vary. Why, then, do we not train our young and restless in the art of feedback engagement? It’s quite simple: Because often, we do not lead by example. The taxonomy we propose yields insights on nuances in effect of focused feedback engagement. Furthermore, our findings suggest that the role of repetitive critical or negative feedback is paramount in training critical self-reflection and for subsequent building of an entrepreneurial mindset.

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